

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A computer-implemented method for enabling a user to extract information from business data, comprising:

receiving an object model description describing an object model used in collecting the business data;

generating a dimensional object model and an analytical programming object model from the object model description, wherein generating comprises deriving data from both the dimensional model and the object model such that the analytical programming model represents data derived from both the dimensional model and the object model;

automatically identifying, using a processor that is a functional component of the computer, a data navigation path between a set of business data in the object model and a set of business data in the analytical programming model~~from a collection of relationships between individual sets of data comprised within the business data;~~

storing, on a computer-readable storage medium, a record of the automatically identified data navigation path; and

providing an indication of the automatically identified data navigation path to the user;

receiving, from the user, a command to activate the automatically identified data navigation path; and

responding to the command by facilitating an automatic transitioning of a display of the business data, wherein automatically transitioning comprises automatically transitioning between a display of the set of business data in the object model and the set of business data in the analytical programming model~~so as to enable the user to move from a first data set to a related second data set, wherein at least one of the first and second data sets comprises aggregated data stored in an on line analytical processing (OLAP) data warehouse.~~

2. (Currently Amended) The method of claim 1, wherein the method further comprises receiving a data context from the user ~~a data context related to the first set of data.~~

3. (Currently Amended) The method of claim ~~2~~1, wherein generating the analytical programming object model ~~the receiving from the user step is the first step further comprises~~ generating the analytical programming object model such that the make-up of the analytical programming object model reflects reference to, and dependence upon, data included in the object model description, a focal point identifier identifying information in the object model as a focal point, and mapping information indicative of a mapping between entities in the object model and a persistent data store.

4. (Currently Amended) The method of claim 2, wherein automatically identifying a data navigation path further comprises:

providing the data context to a provider that is associated with a first type of data navigation;

receiving from the provider a link representing a the data navigation path, that-which is of the first type of data navigation, the data navigation path being selected by the provider based at least in part on a determined relevance to the data context; and

wherein providing the indication of the automatically identified data navigation path to the user comprises providing said link to the user.

5. (Currently Amended) The method of claim ~~2~~1, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include a wherein providing the data context to a provider comprises providing the data context to a provider that is associated with a drill down type of navigation path that facilitates a transition from aggregated data to underlying transactional data.

6. (Currently Amended) The method of claim 24, ~~wherein providing the data context to a provider comprises providing the data context to a provider that is associated with navigation from aggregated data to related transaction data~~ the provider is one of a plurality of separate and distinct providers that are each configured to provide a different type of data navigation path for navigating through the business data.

7. (Currently Amended) The method of claim 21, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include a wherein providing the data context to a provider comprises providing the data context to a provider that is associated with a drill up type of navigation path that facilitates transition from transactional data to corresponding aggregated data.

8. (Currently Amended) The method of claim 21, ~~wherein providing the data context to a provider comprises providing the data context to a provider that is associated with navigation from transaction data to related aggregated data~~ automatically identifying a data navigation path further comprises acquiring a set of metadata from a metadata store, the set of metadata being utilized as a reference to support the automatic identification of the data navigation path.

9. (Currently Amended) The method of claim 21, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include a wherein providing the data context to a provider comprises providing the data context to a provider that is associated with a drill across type of navigation path.

10. (Currently Amended) The method of claim 1, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include a wherein a data navigation path that enables

navigation providing the data context to a provider comprises providing the data context to a provider that is associated with navigation between two data units that ~~determined to share a dimension within the dimensional model.~~

11. (Currently Amended) The method of claim 1, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include wherein providing the data context to a provider comprises providing the data context to a provider that is associated with a ~~an~~ automatically identified drill to details type of navigation path.

12. (Currently Amended) The method of claim 1, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include wherein providing the data context to a provider comprises providing the data context to a provider that is associated with an automatically identified hierarchical data navigation path from one hierarchical level to another through a collections of data that ~~are is~~ hierarchically organized.

13. (Currently Amended) The method of claim 21, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include wherein providing the data context to a provider comprises providing the data context to a provider that is associated with a ~~an~~ automatically identified logic association type of navigation path.

14. (Currently Amended) The method of claim 21, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that include wherein providing the data context to a provider comprises providing the data context to a provider that is associated with ~~an~~ automatically identified data navigation path between two data collections that the user has

identified as related.

15. (Currently Amended) The method of claim 1, wherein the indication of the automatically identified data navigation path provided to the user is providing the data navigation path to the user comprises providing a traversable data navigation link to the user.

16. (Currently Amended) The method of claim 21, wherein the indication of the automatically identified data navigation path is provided to the user as part of providing the data navigation path to the user comprises providing the user with a collection of data navigation links that each represent a data navigation path that is determined to be available based at least in part on a the received data context received from the user, wherein one of the data navigation links corresponds to the provided data navigation path.

17. (Currently Amended) A system for enabling a user to extract information from business data, the system comprising:

- a plurality of data navigation providers each providing a different associated with a specific type of data navigation;
- a navigation service layer ~~configured to that~~ transmits a navigation service request to one or more of the data navigation providers;
- a metadata service ~~that for providing~~ provides the plurality of data navigation providers with access to a metadata store, and wherein each data navigation provider being configured to respond responds to a received data navigation request by accessing the metadata service with a processor and processing metadata from the metadata store so as to automatically identify at least one data navigation path between, and wherein a particular one of the plurality of data navigation providers responds to a received data navigation request by automatically identifying, based at least in part on said metadata accessed from the metadata service, a data navigation path between a set of business data in an object model and a set of business data in an

analytical programming model, the analytical programming model being separate and distinct from the object model a first data set and a related second data set, wherein at least one of the first and second data sets comprises aggregated data stored in an on-line analytical processing (OLAP) data warehouse; and an output interface device displaying that displays to the user the identified data navigation paths automatically identified by the plurality of data navigation providers.

18. (Currently Amended) The system of claim 17, wherein the automatic identification of the data navigation path between the set of business data in the object model and the set of business data in the analytical programming model is further based on a determined relevance to the said at least one data navigation path corresponds to the received data navigation request received by the particular data navigation provider.

19. (Currently Amended) The system of claim 17, wherein the automatic identification of the data navigation path between the set of business data in the object model and the set of business data in the analytical programming model is further based on a determined relevance to a user-provided data context reflected in the data navigation request received by the particular data navigation provider wherein said at least one data navigation path corresponds to a data context provided with the received data navigation request.

20. (Currently Amended) The system of claim 17, wherein each data the particular navigation provider is further configured to respond to provides the navigation service layer with one or more an automatically derived navigation links that is indicative of correspond to said at least one the data navigation path between the set of business data in the object model and the set of business data in the analytical programming model.

21. (Currently Amended) The system of claim 20, wherein the navigation service layer is further configured to provides the user with an aggregated collection of navigation links including

~~the automatically derived navigation link received from the particular navigation provider that represent navigation links collected from multiple data navigation providers.~~

22. (Currently Amended) The system of claim 21, wherein the navigation service layer is ~~further configured to receive~~receives a selection command from the user, the selection command ~~selected from the aggregated collection of navigation links and corresponding to indicating selection of the automatically derived navigation link received from the particular navigation provider~~a selected navigation link.

23. (Currently Amended) The system of claim 22, wherein the navigation service layer is ~~further configured to transmit~~s the selection command to ~~a corresponding one of the data navigation providers~~the particular navigation provider.

24. (Currently Amended) The system of claim 23, wherein the system further comprises a data service provider that is associated with a data collection, the ~~particular corresponding one of the data navigation service providers being configured to interacting~~particular with the data service provider so as to retrieve data from the data collection, wherein the data retrieved from the data collection corresponds to the selection command.

25. (Original) The system of claim 24, wherein the data retrieved from the data collection represents a traversal of the selected navigation link and is returned to the user through the navigation service layer.

26. (Currently Amended) The system of claim 23, wherein the system further comprises a data service provider that is associated with a data warehouse, the ~~particular corresponding one of the data navigation service providers being configured to interacting~~particular with the data service provider so as to retrieve data from the data warehouse, wherein the data retrieved from the data warehouse corresponds to the selection command.

27. (Currently Amended) The system of claim 23, wherein the system further comprises a data service provider that is associated with a database, the particular corresponding one of the data navigation service providers being configured to interacting with the data service provider so as to retrieve data from the database, wherein the data retrieved from the database corresponds to the selection command.

28. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data navigation providers~~ exclusively provides is associated with a type of data navigation that is navigation from aggregated data to related transaction data.

29. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data navigation providers~~ exclusively provides a type of data navigation that is is associated with navigation from transaction data to related aggregated data.

30. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data navigation providers~~ exclusively provides a type of data navigation that is is associated with a drill across type of navigation.

31. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data navigation providers~~ exclusively provides a type of data navigation that is is associated with navigation between two data units that share a dimension.

32. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data navigation providers~~ exclusively provides a type of data navigation that is is associated with a drill to details type of navigation.

33. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data~~

navigation providers exclusively provides a type of data navigation that is ~~is associated with~~ hierarchical navigation through collections of data that are hierarchically organized.

34. (Currently Amended) The system of claim 17, wherein ~~at least one of the plurality of data navigation providers~~ exclusively provides a type of data navigation that is ~~is associated with~~ navigation between two data collections that the user has identified as related.

35. (Currently Amended) The system of claim 17, wherein the navigation service layer is ~~further configured to support~~ at least one successfully registered additional data navigation provider, wherein the successfully registered additional data navigation provider becomes one of the plurality of data navigation providers.

36. - 40. (Cancelled)

41. (New) A computer-implemented method for enabling a user to extract information from business data, comprising:

receiving an object model description describing an object model used in collecting the business data;

generating a dimensional object model and an analytical programming object model from the object model description, wherein generating comprises deriving data from both the dimensional model and the object model such that the analytical programming model represents data derived from both the dimensional model and the object model; and

automatically identifying, using a processor that is a functional component of the computer, a data navigation path between a set of business data in the object model and a set of business data in the analytical programming model.